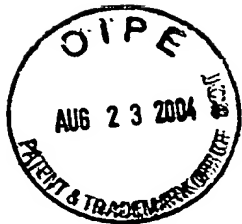


Snapshot taken at t = 9+ of Example 5. cancelling-predicate  
 -new I matches target address in stack

**FIG. 2**



load time address code	predicate-assignment (at load time)				predicate-use (at code execution time)			
	stack							
	B	v	p	TA	$p_{in}=p_r$	$cp_{in}$	$p_{out}$	$cp_{out}$
1 100 $l_1$ $z = x \text{ op } y$				empty	1	0	$p_1=1$	-
2 200 $B_2$ if ( $bc_2$ ) goto 400	$B_2$	1	$P_2$	400	1	0	$p_2=\overline{bc_2}$	$bc_2$
3 300 $l_3$	$B_2$	1	$P_2$	400	$P_2$	0	-	-
4 400 $l_4$				empty	$P_2$	$cp_2$	$\overline{bc_2}+bc_2$	-
5 500 $l_5$				empty	$P_4$	0	-	-
6 600 $B_6$ if ( $bc_6$ ) goto 800	$B_6$	1	$P_6$	800	$P_4$	0	$\overline{bc_6} \cdot p_4$	$bc_6 \cdot p_4$
7 700 $l_7$	$B_6$	1	$P_6$	800	$P_6$	0	-	-
8 800 $l_8$				empty	$P_6$	$cp_6$	$\overline{bc_6}+bc_6$	-
9 900 $l_9$				empty	$P_8$	0	-	-

Equations - for "T":  $p_1=p_{out}=p_{in}+cp_{in}$ ; for "B":  $p_{out}=\overline{bc} \cdot p_{in}$ ;  $cp_{out}=bc \cdot p_{in}$

FIG. 3



load			predicate-assignment (at load time)				predicate-use (at code execution time)				
time	address	code	stack								
			B	v	p	TA	$p_{in}=p_r$	$cp_{in}$	$p_{out}$	$cp_{out}$	$p_l$ - condition for l execution
1	100	$l_1$				empty	1	0	$p_1=1$	-	1
2	200	$B_2$				$\begin{bmatrix} 1 & P_2 & 800 \end{bmatrix}$	1	0	$p_2=\overline{bc_2}$	$bc_2$	1
3	300	$l_3$				$\begin{bmatrix} 1 & P_2 & 800 \end{bmatrix}$	$P_2$	0	-	-	$\overline{bc_2}$
4	400	$B_4$				$\begin{bmatrix} 1 & P_4 & 600 \\ 1 & P_2 & 800 \end{bmatrix}$	$P_2$	0	$\overline{bc_4+p_2}$	$bc_4 \cdot p_2$	1
5	500	$l_5$				$\begin{bmatrix} 1 & P_4 & 600 \\ 1 & P_2 & 800 \end{bmatrix}$	$P_4$	0	-	-	$\overline{bc_2 \cdot bc_4}$
6	600	$l_6$				$\begin{bmatrix} 1 & P_2 & 800 \end{bmatrix}$	$P_4$	$cp_4$	$p_6 \cdot cp_4$	$-\overline{bc_4 \cdot bc_2} + bc_4 \cdot \overline{bc_2} = \overline{bc_2}$	
7	700	$l_7$				$\begin{bmatrix} 1 & P_2 & 800 \end{bmatrix}$	$P_6$	0	-	-	$\overline{bc_2}$
8	800	$l_8$				empty	$P_6$	$cp_2$	$p_6+cp_2$	-	$\overline{bc_2}+bc_2=1$
9	900	$l_9$				empty	$P_8$	0	-	-	1

Equations - for "T":  $p_1=p_{out}=p_{in}+cp_{in}$ ; for "B":  $p_{out}=\overline{bc} \cdot p_{in}$ ;  $cp_{out}=bc \cdot p_{in}$

FIG. 4



load time	address	code	predicate-assignment (at load time)			predicate-use (at code execution time)		
			stack					
			$\underline{B}$	$v_i$	$p_i$	$\underline{TA}$	$p_{in}=p_r$	$cp_{in}$
1	100	$I_1$				empty	1	0
							$p_i=1$	-
							$p_i=1$	1
2	200	$B_2$					1	0
							$p_2=\overline{bc_2}$	$bc_2$
3	300	$I_3$					$P_2$	0
							-	-
							$\overline{bc_2}$	
4	400	$B_4$					$P_2$	0
							$\overline{bc_4}+p_2$	$bc_4 \cdot p_2$
							1	
5	500	$I_5$					$P_4$	0
							-	-
							$\overline{bc_4} \cdot \overline{bc_2}$	
6	600	$I_6$					$P_4$	$cp_2$
							$p_4 \cdot cp_2$	-
							$(\overline{bc_4} \cdot \overline{bc_2}) + bc_2 = \overline{bc_4} + bc_2$	
7	700	$I_7$					$P_6$	0
							-	-
							$\overline{bc_4} + bc_2$	
8	800	$I_8$					$P_6$	$cp_4$
							$p_6 + cp_4$	-
							$\overline{bc_4} + bc_2 + (bc_4 \cdot \overline{bc_2}) = 1$	
9	900	$I_9$					$P_8$	0
							-	-
							1	

Equations - for "T":  $p_1 = p_{out} = p_{in} + cp_{in}$ ; for "B":  $p_{out} = bc \cdot p_{in}$ ;  $cp_{out} = bc \cdot p_{in}$

FIG. 5



			predicate-assignment (at load time)				predicate-use (at code execution time)			
load time	address	code	stack			$p_{in}=p_r$	$cp_{in}$	$p_{out}$	$cp_{out}$	$p_i$ - condition for l execution
			B	v	p TA					
1	100	$I_1$ $z = x \text{ op } y$	empty			1	0	$p_1=1$	-	1
2	200	$B_2$ if ( $bc_4$ ) goto 800	$B_2$	1	$P_2$ 1000	1	0	$p_2=\overline{bc}_2$	$bc_2$	1
3	300	$I_3$	$B_2$	1	$P_2$ 1000	$P_2$	0	-	-	$\overline{bc}_2$
4	400	$B_4$ if ( $bc_4$ ) goto 800	$B_4$	1	$P_4$ 800	$P_2$	0	$\overline{bc}_4+p_2$	$bc_4 \cdot p_2$	1
			$B_2$	1	$P_2$ 1000					
5	500	$I_5$	$B_4$	1	$P_4$ 800	$P_4$	0	-	-	$\overline{bc}_4 \cdot \overline{bc}_2$
			$B_2$	1	$P_2$ 1000					
6	600	$B_6$ if ( $bc_6$ ) goto 1200	$B_6$	1	$P_6$ 1200	$P_4$	0	$\overline{bc}_6 \cdot p_4$	$bc_6 \cdot p_4$	1
			$B_4$	1	$P_4$ 800					
			$B_2$	1	$P_2$ 1000					
7	700	$I_7$	$B_6$	1	$P_6$ 1200	$P_6$	0	-	-	$\overline{bc}_6 \cdot \overline{bc}_4 \cdot \overline{bc}_2$
			$B_4$	1	$P_4$ 800					
			$B_2$	1	$P_2$ 1000					
8	800	$I_8$ ←	$B_6$	1	$P_6$ 1200	$P_6$	$cp_4$	$p_6+cp_4$	-	$(\overline{bc}_6 \cdot \overline{bc}_4 \cdot \overline{bc}_2) + (bc_4 \cdot \overline{bc}_2)$ $= (\overline{bc}_6 + bc_4) \overline{bc}_2$
			$B_4$	0	$P_4$ 800					
			$B_2$	1	$P_2$ 1000					
9	900	$I_9$	$B_6$	1	$P_6$ 1200	$P_8$	0	-	-	$(\overline{bc}_6 + bc_4) \overline{bc}_2$
			$B_4$	0	$P_4$ 800					
			$B_2$	1	$P_2$ 1000					
10	1000	$I_{10}$ ←	$B_6$	1	$P_6$ 1200	$P_8$	$cp_2$	$p_8+cp_2$	-	$((\overline{bc}_6 + bc_4) \overline{bc}_2) + bc_2$ $= \overline{bc}_6 + bc_4 + bc_2$
11	1100	$I_{11}$	$B_6$	1	$P_6$ 1200	$P_{10}$	0	-	-	$(\overline{bc}_6 + bc_4) bc_2$
12	1200	$I_{12}$ ←	empty			$P_{10}$	$cp_6$	$p_{10}+cp_6$	-	$bc_6 + bc_4 + bc_2 +$ $(bc_6 \cdot bc_4 \cdot bc_2) = 1$
13	1300	$I_{13}$	empty			$P_{12}$	0	-	-	1

Equations - for "T": p<sub>1</sub>=p<sub>out</sub>=p<sub>in</sub>+cp<sub>in</sub>; for "B": p<sub>out</sub>=bc·p<sub>in</sub>; cp<sub>out</sub>=bc·p<sub>in</sub>

FIG. 6